preliminary insight into RBC transfusion practice and its influence on HSCT outcomes.

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NEPHROTOXICITY OF CONCOMITANT ADMINISTRATION OF TACROLIMUS AND NEPHROTOXIC ANTIMICROBIAL AGENTS (AMINOGLYCOSIDES AND GLYCOPEPTIDES) AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Background: Tacrolimus has been widely used for the prophylaxis or treatment of graft-versus-host disease (GVHD) after allogeneic hematopoietic stem cell transplantation (allo-HSCT). Nephrotoxicity is one of its most important toxicities. Recipients of all-HSCT are highly susceptible to infectious complications and are often treated with nephrotoxic antimicrobial agents such as aminoglycosides (AGs) and glycopeptides (GPs). Since nephrotoxicity of concomitant use of tacrolimus and these nephrotoxic agents has yet to be fully and systematically evaluated, we retrospectively evaluated it in the recipients of allo-HSCT.
Patients & Methods: Recipients of allo-HSCT who received intravenous AGs or GPs during the continuous intravenous infusion of tacrolimus within 30 days after transplantation were selected from the data base and 50 patients were included. Patients who received liposomal amphotericin-B or foscarnet were excluded. The data including patient characteristics, whole blood concentration of tacrolimus, dose and duration of AG/GP treatment, and serum creatinine (sCr) were evaluated. Therapeutic drug monitoring of AGs, GPs, and tacrolimus was performed in all the patients.
Results: Median age of the patients was 47.5 years (range: 18-60) and diagnoses were all hematological diseases. In the 50 patients, there were 40 episodes of tacrolimus concomitant with AGs (amikacin, gentamicin, arbekacin) and 38 with GPs (teicoplanin, vancomycin). Median duration of the concomitant administration with tacrolimus was 8 days (range: 2-22) for AGs and 11.5 days (range: 4-40) for GPs. Mean blood concentrations of tacrolimus during AG and GP administration were 17.1 ± 2.1 and 16.2 ± 1.6 μg/ml, respectively. Twice or greater increases of sCr compared with that before initiating AGs or GPs were observed only in 2 of 40 (5.0%) episodes with AGs and 1 of 38 (2.8%) with GPs. Nephrotoxicity was reversible and manageable in all cases and no patient required hemodialysis.
Conclusion: Concomitant administration of tacrolimus and AGs or GPs is feasible even in the early post-transplant period. However, appropriate management with therapeutic drug monitoring for each agent is essential.

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FACTORS ASSOCIATED WITH THE AVOIDANCE OF RED CELL TRANSFUSION AFTER HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Background: Red blood cell (RBC) transfusion is required frequently for most patients following hematopoietic stem cell transplantation (HSCT). RBC transfusion, however, can be associated with adverse events including transfusion reactions, acquiring transmissible disease and delayed recovery. Factors associated with avoidance of transfusion are not well documented.

Study Design and Methods: Data concerning RBC transfusions between day 0 and day +30 were analyzed for patients undergoing HSCT at a single Canadian transplant centre between January 2002 and December 2007.

Results: Of 555 patients undergoing HSCT with complete RBC transfusion data, 59 patients (10.6%) did not require RBC transfusion in the first 30 days after HSCT. Univariate analysis showed no significant difference in age, graft source or conditioning regimen between transfused compared with non-transfused patients. Factors that were significantly associated with avoidance of transfusion included male gender ($p = 0.0013$), diagnosis ($p < 0.0001$), early stage disease ($p = 0.006$) and higher baseline haemoglobin (Hb) at time of transplant ($p < 0.0001$). In multivariate analysis, higher pre-transplant Hb, OR 9.73 (4.11, 23.02), and early stage disease, OR 2.24 (1.05, 4.76), remained significantly associated with avoidance of RBC transfusion. The degree of RBC transfusion correlates with the pre-transplant Hb value ($r = -0.89$). In particular, a pre-transplant hemoglobin level of 114 g/L or greater was most strongly associated with the avoidance of RBC transfusion.
Conclusion: Increased pre-transplant Hb and early stage disease are associated with avoidance of RBC transfusion after HSCT. Interventions aimed at improving pre-transplant hemoglobin levels require further study.

CRP–DATA MANAGEMENT

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PART-TIME EMPLOYMENT OF GRADUATE STUDENTS FOR CIBMTR DATA SUBMISSION IS HIGHLY EFFICIENT AND MUTUALLY ADVANTAGEOUS

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The Bone Marrow Transplantation & Cellular Therapy Program and the School of Public Health, Department of Epidemiology at the University of Alabama at Birmingham, has partnered with first year Master candidates for completion and submission of stem cell recipients' CIBMTR forms. Both the transplant program and the students have benefited from this collaboration.
Resource Management: The Adult Program averages 100 transplant patients per year and this requires 2 full-time equivalents for timely completion of CIBMTR forms. In this capacity, the Program currently employs 1 full-time equivalent. The second position employs a Graduate Student Assistant in an irregular part-time position without benefits, and performs identical data retrieval and entry duties.
Time Utilization: The Graduate Student Assistant's time is scheduled around their classes with both morning and evening work hours available. This schedule can be easily accommodated as the School of Public Health is located only three blocks from the Hospital.
Benefits: Benefits for the students exceed simple financial compensation and are outlined below. Likewise the transplant program benefits from these highly motivated individuals.

Student-

- Financial pay comparative to entry level FTE
- Potential internships within UAB Hospital
- Project management skills attained
- Data analysis skills
- Process improvement participation
- Abstracts/Publications
- Easy accessibility between work and school
- Program Director recommendation for desired careers (examples include staff epidemiologists, dental school and other doctorate programs)

Program-

- Medically knowledgeable
- Cost savings-full-time vs. irregular part time without benefits
- Data analysis assistance
- Research assistance
- Enhanced computer skills of a master level student
- Generally highly efficient and goal oriented employees

Future Goals: Exit interviews to survey students' satisfaction, educational benefits and skills enhancement.